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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,121	06/25/2001	Takashi Endo	35.C15484	7326

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FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER

SUNG, CHRISTINE

ART UNIT PAPER NUMBER

2878

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/887,121

Applicant(s)

ENDO, TAKASHI

Examiner

Christine Sung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 19-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. Figure 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 18 is objected to because of the following informalities: The third line of the claim reads “radiations are” but should read --radiation is--. Appropriate correction is required.

### ***Specification***

3. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the specification includes numerous grammar errors.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 5, 11, 12, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Crowell (US Patent 5,804,832).

Regarding claims 1 and 12, Crowell discloses a radiation imaging system comprising: a radiation image detection panel (Figure 5, element 22) having a means for converting radiation into electric signals; an outer enclosure which holds the radiation image detection panel (figure 5, elements 36 and 38) wherein the radiation imaging system further comprises an elastic support means (Figure 5, element 40) and the radiation image detection panel is elastically supported by the elastic support means toward the outer enclosure (Figure 5). Further, Crowell discloses a pair of sealed panels (elements 50 and 52) that enclose the radiation detection panel, and are elastically supported.

Regarding claims 2 and 14, Crowell further discloses that the radiation imaging system includes an electric circuit board (Figure 5, element 48).

Regarding claims 4 and 16, Crowell further discloses a support plate (Figure 5, element 44) that supports the radiation image detection panel and the electric circuit board being attached to the support plate (Figure 5) so that the circuit board is integrally attached to the radiation image detection panel.

Regarding claims 5 and 17, Crowell further discloses that the elastic support means comprises a rubbery or similar flexible material (Column 5, lines 18-19).

Regarding claim 11, Crowell discloses elastic support means, as disclosed above and further the elastic support means has a restricted range of motion. Although Crowell does not explicitly describe a stopper, it is inherent that no matter how much force is exerted upon the elastic support means, it will always restrict the motion range of the support plate and in the downward direction.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 and 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowell (US Patent 5,804,832) in view of Lys et al. (US Patent 6,211,626).

Crowell discloses all the limitations set forth in claims 1 and 12 but fails to specifically disclose the use of a flexible circuit board. It is well known in the art to use flexible circuit boards in situations where there is a stress placed on the circuit board, as disclosed in Lys et al. Lys discloses that LEDs can be mounted to a flexible circuit board (column 75, line 63- column 76, line 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a flexible circuit board as disclosed by Lys et al. to reduce the stress placed on the circuit board disclosed by Crowell, which reduces the possibility of failure in the circuitry.

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8. Claims 6-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowell (US Patent 5,804,832) in view of Frederick (US Patent 5,796,109).

Regarding claim 6-8, Crowell discloses the limitations set forth in claim 1, but does not specify that the elastic support means comprises a spring. Frederick discloses using a spring (element 36) to protect and absorb shock in a radiation detection system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the springs disclosed by Frederick with the invention disclosed by Crowell to be able to tune the system to a desired load for a desired application. Further because the types of springs disclosed in the claims are well known in the art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used any spring that attained the necessary properties because it is only a matter of design choice.

Regarding claims 9 and 10, Frederick discloses that the scintillation or detector element is encased in a potting material (see abstract) or cushioning material. It would have been obvious to one having ordinary skill in the art to have used such a potting or cushioning material to protect the detector element from the outer enclosure, which will further keep the integrity of the detector elements intact. Regarding claim 10, although Frederick does not disclose that the material specifically comprise a radiation transmissive member, it would have been obvious to use the potting material stated by Frederick to cushion the detection panel and the outer enclosure. Further as a matter of design choice, it would have been obvious to use a radiation transmissive material in order to not restrict the ability of the radiation to reach the detector.

Further, regarding claim 13, Frederick discloses an elastomeric layer 38 for cushioning (see abstract) the detector elements, and surrounds the entire cylindrical detector. Frederick

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demonstrates that the use of the elastomeric layer provides cushioning and protection from shock for the detector elements. It would have been obvious to one having ordinary skill in the art to have used this elastomeric layer with the invention claimed by Crowell to further protect the detector elements from added shock that could damage the detector.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crowell (US Patent 5,804,832).

Crowell discloses the limitations set forth in claim 12. Further he discloses that there is a removable sliding EL (electro luminescent) (column 5, lines 39-49) inner casing, that when removed creates an opening on the side where the radiation is incident. It would have been obvious to one having ordinary skill in the art to remove the EL when it isn't in use, i.e. during detection, and it is obvious that the EL is not necessary for detection to take place. Further, the use purpose of the window is to allow all radiation to enter and hit the detector, and it is obvious that the EL panels must not inhibit radiation from entering the detector.

***Allowable Subject Matter***

10. Claims 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Claims 19-20 disclose the use of a flange as a part of the inner case. None of the prior art of record discloses using a flange for the protection of the detector panel.

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***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US Patent 4,567,543- This reference disclose the use of a flexible circuit board.
- b. US Patent 5,031,198- This reference discloses the use of a flexible circuit board.
- c. US Patent 4,900,937- This reference discloses the use of a spring to protect the detector elements from shock.
- d. US Patent 5,283,439- This reference discloses the use of a spring to protect the detector elements from shock.
- e. US Pre Grant Publication 2002/0005490 A1- This reference discloses a similar apparatus as claimed in this invention but is from the same assignee.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 703-305-0382. The examiner can normally be reached on Monday- Friday 7-4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-0956 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.




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CS

April 16, 2003



**DAVID PATA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**